StatSpin® Express 3

PRIMARY TUBE CENTRIFUGE

Achieve Faster Turnaround Times and Greater Productivity

The StatSpin Express 3 provides faster turnaround time and greater productivity for your laboratory. Place it next to any STAT analyzer and serum or plasma is ready in just minutes.

With only 3 settings it is simple to use. Just select the 2, 3 or 5 minute button and press start. No fumbling with settings or the need to readjust the speed. For safety, the lid remains locked until the rotor comes to a complete stop. The unit beeps when it is done spinning.

Samples can be processed as they arrive in the lab; no need for batching, no unproductive time spent waiting for the centrifuge ...you'll have results in minutes. Now you can process as many as 8 samples at once for higher throughput.

The Express 3 comes with adapters for 5 and 10 mL tubes.

The StatSpin Express 3 holds 8 tubes up to 10 mL.

StatSpin Express 3 is Ideal for:

- Rapid plasma for coagulation testing
- Sample prep for STAT chemistry
- Cardiac profiles in the ER
- Anywhere rapid serum or plasma is needed

High Quality Results

In just 2 minutes, the Express 3 can produce serum or plasma equal to tubes spun for 7-10 minutes in conventional clinical centrifuges.

Iris® Sample Processing

StatSpin Express 3 : Small, Fast, Powerful

StatSpin Express 3 is UL and CE marked. Universal power input works off any AC electrical power from 100-240V. Suitable for worldwide locations.

The StatSpin Express 3 is powerful. The rugged brushless motor is maintenance-free. StatSpin provides a comprehensive 2-year warranty.

The StatSpin Express 3 comes with adaptors for 5 and 10 mL tubes. Adaptors are also available for other tube sizes.

System Specifications:

Dimensions	Height 7.1 inches/18.0 cm Width 10.5 inches/26.7 cm Depth 10.0 inches/25.4 cm Weight 9.5 lbs (4.3 kg)
Acceleration Time	<25 seconds to 95 % of speed
Deceleration Time	< 30 seconds
Cycle Times/Speed/RCF	2 minutes 7200 rpm/4400 xg (+/-5%) 3 minutes 7200 rpm/4440 xg (+/-5%) 5 minutes 5600 rpm/2685 xg (+/-5%)
Tube Sizes	Accepts blood tubes 1.5-10mL
Power Requirements	100 to 240V, 50/60 Hz, 3 amp
Warranty	2 Years

StatSpin Express 3 Ordering Information

Product #	Description
SSX3	**StatSpin Express 3 for 100-240V, 50/60 Hz.** Includes 8 place rotor, removable bowl liner, eight 5 mL inserts, eight 10 mL inserts and power cord.

Iris® Sample Processing
60 Glacier Drive
Westwood, MA 02090
Tel:781.551.0100
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www.proiris.com

Express 3 Primary Tube Centrifuge

Operator's Manual

A Division of IRIS International, Inc.

Operator's Manual

Express 3 Primary Tube Centrifuge

Model Number M502-22

For *in-vitro* diagnostic use

Product Number
SSX3 - Express 3 for 100-240 VAC, 50/60 Hz

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How to use this manual

This manual along with information contained on product labels and in package inserts should provide you with all the information you need to operate and maintain the Express 3.

Notes appear in italics to highlight information.

When the information requires special attention, a caution symbol ⚠ appears next to the italicized text.

Please pay close attention to the instructions that accompany the notes and symbols as well as the standard laboratory practices outlined by your facility and local regulatory agencies. The table below lists all the CAUTIONS and WARNINGS for the Express 3.

	WARNING *– Do not expose the Express 3 or its rotor to strong or concentrated acids, bases or oxidizing agents, aromatic or halogenated hydrocarbons, esters or ketones.*
	WARNING *– Do not operate or store the Express 3 or its rotor below the 2°C minimum operating temperature. At extreme low temperature (below -18°C) the rotor material is subject to cracking under impact stress (such as dropping onto a hard surface).*
	WARNING - *Do not use the supplied line cord outside of North America**.** Use a power cord with a grounded male connector suitable for the power outlet being used, which is rated at 3.0 Amps or more and has an IEC320/CEE22 female connector to attach to the centrifuge.*
	CAUTION *– Never operate the Express 3 without the rotor locked securely in place. Failure to properly install and secure the rotor may result in damage to the centrifuge not covered by warranty.*
	CAUTION *- Replace Tube Insert immediately if a tube breaks during centrifugation.*
	CAUTION *- Replace tubes used for rotor balancing after 10 spin cycles to reduce chances of breakage due to the repeated stress of centrifugation.*
	CAUTION- *The rotor (RTX8) has a finite lifespan that is dependant on usage. Cracks or swelling that develop indicate the rotor should be replaced immediately.*
	CAUTION *- The cover interlock by-pass is for emergency use only. Misuse may expose the operator to unsafe conditions.*
	CAUTION *– Do not spray cleaning solutions directly onto the centrifuge bowl or housing; overspray could reach the motor bearings or internal circuitry. Subsequent damage may not be covered by warranty.*
	CAUTION – *Unplug the Express 3 from the wall outlet before cleaning or performing maintenance.*
	CAUTION – *Follow Universal Precautions with all biological specimens, regardless of whether the specimen is known to contain an infectious agent. (See references)*

Please use the system as intended. Improper use of the Express 3 Primary Tube Centrifuge and/or its accessories may cause damage to the system, inaccurate results, or potentially nullify warranties.

Do not operate or store instrument beyond specified temperatures.

Section 1

Unpacking and Installation

Inspect Packaging

The Express 3 and its accessories are delivered in a single carton. If the centrifuge or accessories have been damaged in transport, please inform your carrier immediately.

NOTE: Save the shipping carton and packing materials to facilitate return should service be required.

Verify Contents

The package contains:
One Express 3 centrifuge (Model No. M502-22)
One centrifuge rotor (Product No. RTX8)
Eight rotor inserts for 13x75 mm tubes (Product No. SV08)
Eight rotor inserts for 16x100 mm tubes (Product No. SV07)
One grounded line cord (for use in North America only)
One Operator's Manual
One manual latch release tool
One Setting Guide
One 5/16 inch hex key tool

Install

- Place the Express 3 on a solid level surface suitable for operation of laboratory instrumentation.
- Maintain a 30 cm clearance around the centrifuge for ventilation and safety.
- Position the Express 3 out of direct sunlight and away from sources of intense heat or cold.
- See the Appendix for the acceptable range of operating temperature and humidity.
- Remove the foam shipping retainer around the rotor before operating the centrifuge.

Connect Power

- Plug the centrifuge into a grounded outlet supplying 100-240 V @ 50-60 Hz.
- Turn on the power switch (located on the rear panel, above the line cord connector).
- When the instrument completes the power-on check it will give a two-beep ready signal. The two-minute green indicator will illuminate. Press the stop button to release the latch and open cover.

WARNING - Do not use the supplied line cord outside of North America. Use a power cord with a grounded male connector suitable for the power outlet being used, which is rated at 3.0 Amps or more and has an IEC320/CEE22 female connector to attach to the centrifuge.

Section 2

System Overview

Principle and Intended Use

IVD For *in-vitro* diagnostic use to produce the rapid separation of whole blood contained in original collection tubes.

The Express 3 is a high-speed bench top centrifuge used to rapidly separate blood components in the original sample collection tubes.

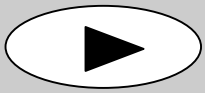
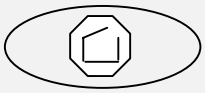
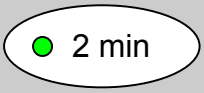
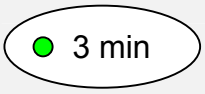
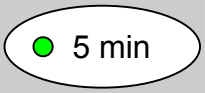
The eight-place 30° angle rotor included with the centrifuge produces rapid separation while minimizing potential for re-suspension of cells. The operator selects a fixed spin time of 2, 3, or 5 minutes. The rotation speed is fixed at 7200 rpm for the 2 and 3 minute cycles, producing a centrifugal force of 4440 xg at a rotor radius of 7.65 cm.

The 5 minute cycle generates 2685 xg at 5600 rpm. This setting is intended for use with large glass tubes (7mL and 10 mL), which require lower g-forces. Five minutes at 5600 rpm produces the same degree of separation achieved with three minutes at 7200 rpm.

Symbols and Definitions

REF	Product/Reference Number	Indicates the Iris Sample Processing product/catalog number
	Caution	Statement of caution/warning: Read carefully.
	Temperature limitation	Indicates storage or operating temperature restrictions
EC REP	EC Representative	European Community Authorized Representative
IVD	For *in vitro* diagnostic use	Indicates for use only as *in-vitro* diagnostic device
	Non-sterile	Indicates a non-sterile product
S N	Serial Number	Indicates instrument serial number
	Consult Instructions	Refers operator to the instruction manual for additional information

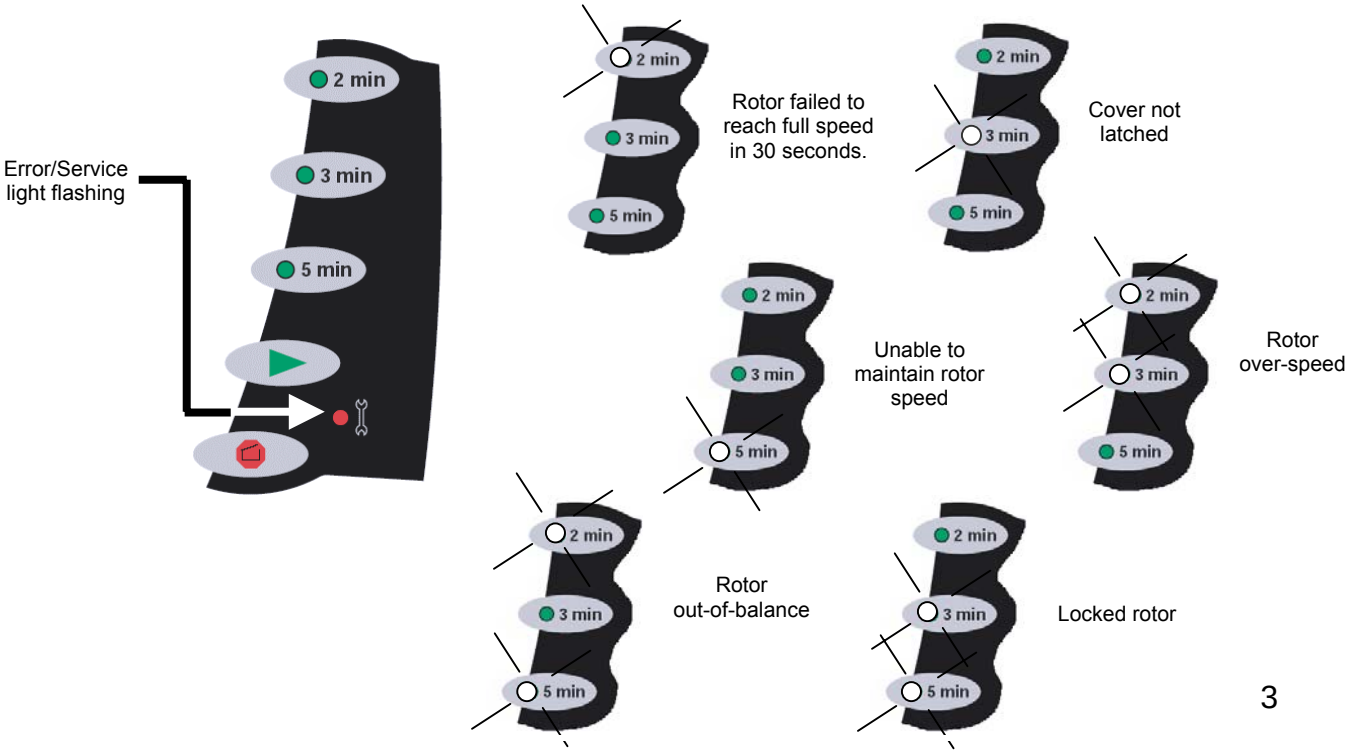
Operator Controls

	Start	The *Start* button initiates the selected cycle.
	Stop/Open	The *Stop/Open* button interrupts the cycle and releases the cover when the rotor has stopped.
	2 Minute Cycle	The *2 min* button selects a cycle of two minutes at 7200 rpm.
	3 Minute Cycle	The *3 min* button selects a cycle of three minutes at 7200 rpm.
	5 Minute Cycle	The *5 min* button selects a cycle of five minutes at 5600 rpm.
	Error/Service	The red indicator with an adjacent wrench symbol flashes to signal an error condition or remains continuously illuminated when service is needed.

Error Indicators

Express 3 error conditions are signaled by a flashing red *Error/Service* indicator on the control panel.

The cause of the error condition can be identified by the combination of green cycle time indicators that are also flashing.



Accessories

Product No.	Description
SV02	Inserts for 3 mL tubes (10.25 x 64 mm) 4/pk.
SV03	Inserts for 2 mL tubes (10.25 x 47 mm or BD Microtainers) 4/pk.
SV04	Inserts for 1.5-2 mL Microtubes (e.g. LipoClear) 4/pk.
SV05	Inserts for 2 mL tubes (BD Microtainers) 4/pk.
SV06	Inserts for 7 mL tubes (16 x 75 mm) 8/pk.
SV07	Inserts for 10 mL tubes (16 x 100 mm) 8/pk. Included with centrifuge
SV08	Inserts for 5 mL tubes (13 x 75 mm) 8/pk. Included with centrifuge
SV09	Inserts for 7 mL tubes (13 x 100 mm) 8/pk.
DL02	Disposable bowl liners 3/pk.
RTX8	8 place rotor. Included with centrifuge

Section 3

Operating Instructions

Opening and Closing the Cover

An electronic operated cover interlock mechanism prevents operation if the cover is not completely closed and locked, and prevents the cover from opening when the rotor is turning. An operating cycle can be initiated only if the cover latch is engaged.

Cover Interlock By-pass

In case of power failure or malfunction, the *Stop/Open* button may not release the cover. To recover samples in the rotor, the cover interlock mechanism can be released manually by inserting the manual latch release tool supplied with the instrument into the small hole located in the front of the housing. Push the tool inward about one inch (25 mm) to release the latch.

CAUTION - *The cover interlock by-pass is for emergency use only. Misuse may expose the operator to unsafe conditions.*

Removing and Installing the Rotor

The Express 3 is shipped with the rotor installed and supported by a shipping retainer. To prevent possible damage to the centrifuge's motor mount, it is important to remove the rotor whenever the centrifuge is moved or shipped to another location.

CAUTION - *The rotor (RTX8) has a finite lifespan that is dependant on usage. Cracks or swelling are signs of fatigue, replace immediately.*

Before operating the centrifuge, ensure that retaining nut has been tightened completely.

To remove the rotor:

1. Remove the tube inserts from the rotor.
2. Loosen and unscrew the retaining nut using the 5/16 inch hex key tool.
3. Remove the retaining nut and lift the rotor off the drive shaft.

To re-install rotor:

Note that there are two drive pins adjacent to the drive shaft on the rotor mount. These pins mate with the corresponding holes on the bottom of the rotor.

1. Rotate the rotor so that wells 5 and 6 are aligned with the drive pins.

2. Slide the rotor onto the shaft and push down gently to seat the drive pins in the holes.
3. Place the retaining nut on the shaft and tighten securely using the 5/16 inch hex key.

You will not be able to tighten the retaining nut if the drive pins are not properly aligned. If this occurs lift the rotor off and repeat the process until it is seated.

Spinning the Sample

CAUTION - *Never operate the Express 3 without the rotor locked securely in place. Failure to properly install and secure the rotor may result in damage to the centrifuge not covered by warranty.*

Loading

1. Ensure the appropriate tube inserts are installed. The Express 3 centrifuge is provided with eight tube inserts for 13 x 75 mm tubes (Product No. SV08) and eight tube inserts for 16 x 100 mm tubes (Product No. SV07). Other sizes are available (See accessories).
2. The rotor must be properly balanced to ensure smooth operation. DO NOT spin a single tube.
3. Use the same size and style tubes in opposite positions. Balance liquid in tubes to within 0.5 mL.

CAUTION *- Replace Tube Insert immediately if a tube breaks during centrifugation.*

CAUTION *- Replace tubes used for rotor balancing after 10 spin cycles to reduce chances of breakage due to the repeated stress of centrifugation.*

4. Close and latch the centrifuge cover.
5. Select the spin time by pressing the appropriate cycle time button.
6. Press *Start* button.

Cycle Settings

The operator should select spin time settings to achieve optimum results for specific applications. The following are general guidelines:

Setting		Speed	RCF
2 min	Produces high quality plasma/serum from whole blood for chemistry, coagulation and cardiac testing.	7200 rpm	4440 xg
3 min	Produces high quality plasma/serum in gel tubes and large plastic collection tubes from whole blood for chemistry or coagulation testing.	7200 rpm	4440 xg
5 min	Produces separation equivalent to 3 min setting. Centrifugal forces are decreased to accommodate. larger glass tubes which require lower g-forces.	5600 rpm	2685 xg

Tube Guide by Settings

Tube Size	Insert	Tube Dimension	2 minute	3 minute	5 minute
5 mL	SV08	13x75 mm	Plastic	Plastic/Gel	Glass/Plastic/Gel
7 mL	SV06	16x75 mm	Plastic	Plastic/Gel	Glass/Plastic/Gel
7 mL	SV09	13x100 mm	Plastic	Plastic/Gel	Glass/Plastic/Gel
10 mL	SV07	16x100 mm	Plastic	Plastic/Gel	Glass/Plastic/Gel

Unloading

1. Upon completion of the cycle, the rotor decelerates to a complete stop in 30 seconds or less, a signal beep will sound, and the cover latch automatically releases.
2. Lift the cover.
3. Carefully remove the tubes using care not to re-suspend the sample.

Section 4

Maintenance

Overview

Iris Sample Processing recommends that instrument operators perform periodic inspections and preventative maintenance on all instruments. Contact customer service department or your distributor if the instrument is not functioning properly.

CAUTION - *Unplug the Express 3 from the wall outlet before cleaning or performing maintenance.*

WARNING *– Do not expose the Express 3 or its rotor to strong or concentrated acids, bases or oxidizing agents, aromatic or halogenated hydrocarbons, esters or ketones.*

Cleaning

The Express 3 is supplied with a disposable bowl liner to simplify routine cleaning. Additional bowl liners are available (Product No. DL02). The liner should be replaced as needed. Clean the outside surfaces and switch overlay panel with a water-dampened cloth and mild detergent. Clean the inner surface or bowl with a mild detergent, and if necessary, a disinfectant, wiping surfaces with a **dampened** cloth using 70% alcohol or 10% bleach solution.

CAUTION - *Do not spray cleaning solutions directly onto the centrifuge bowl or housing; overspray could reach the motor bearings or internal circuitry. Subsequent damage may not be covered by warranty.*

General Cleaning

1. Open centrifuge cover.
2. Unplug centrifuge from the electrical outlet.
3. Remove all tubes and inserts. Remove the rotor (see Removing and Installing the Rotor).
4. Remove the black gasket surrounding the chamber by pulling up one end of the gasket.
5. Remove the bowl liner and dispose. Install a new bowl liner.
6. Replace the black gasket around the chamber opening.
7. Re-install rotor (see Removing and Installing the Rotor).
8. Plug into electrical outlet.

Rotor Disinfecting

1. Open centrifuge cover.
2. Unplug from the electrical outlet.
3. Remove all tubes and inserts. Remove the rotor (see Removing and Installing the Rotor).
4. The rotor and inserts may be soaked in detergent and warm water or a 10% bleach solution.
5. **DO NOT** attempt to clean an insert that has a broken tube. Dispose of insert immediately.
6. Dry the rotor and inserts with a clean absorbent paper towel or allow to air dry.
7. Re-install the rotor (see Removing and Installing the Rotor).
8. Plug into electrical outlet.

Checking the Rotor Speed

The rated speeds ($\pm$5%) can be checked with a stroboscope or photoelectric tachometer. If the Express 3 fails to achieve an operating speed of 7200 rpm $\pm$5% in the 2 min and 3 min settings or 5600 rpm $\pm$5% in the 5 min setting, contact your distributor or the Iris Sample Processing customer service department.

Troubleshooting

No power light

↓

Is the line cord completely plugged into the wall? → No → Plug line cord into the wall.

↓

Yes

↓

Is the wall outlet working properly? → No → Try another wall outlet.

↓

Yes

↓

Is the fuse blown? → Yes → Replace fuse.

↓

No

↓

Contact Iris Sample Processing or an Authorized Repair Facility.

Centrifuge will not spin, or shuts off prematurely

↓

Is the cover closed and latched? → No → Completely close the cover.

↓

Yes

↓

Is the error light flashing? → Yes → Identify source of error from flashing indicator lights, correct the error condition, and push the *Stop/Open* button to clear the error.

↓

No

↓

Contact Iris Sample Processing or an Authorized Repair Facility.

Centrifuge will not open at end of cycle

↓

Is the bowl gasket completely seated and sealing the bowl? → NO → Press the bowl gasket all the way down into the housing slot.

↓

YES

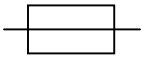
↓

Contact Iris Sample Processing or an Authorized Repair Facility.

Service

Refer all service to Iris Sample Processing or an Authorized Repair Facility. 1-800-782-8774

Instrument fuse(s) are located on the rear panel. Remove the line cord to access the fuse holder. Replace with fuses of the same type and rating.

 3.0A 250V F 5 x 20 mm

Be sure to complete the Warranty Registration Card as directed or go to *http://www.proiris.com/* to obtain a copy of the warranty card.

Decontamination before returning for service:

Any instrument or accessory that has been exposed to blood or other biological materials must be cleaned prior to shipment to the manufacturer or distributor for service. This decontamination is required by Federal Law (Title 48 and 49 of the Federal Regulations) and in accordance with the Environmental Protection Agency's Regulations for Biohazard Waste Management. Iris Sample Processing personnel cannot perform this decontamination.

Section 5

Appendix

Specifications

Product Number	SSX3
Model Number	M502-22
Spin Parameters	2 min: 120 seconds @ 7200 rpm / 4440 xg
	3 min: 180 seconds @ 7200 rpm / 4440 xg
	5 min: 300 seconds @ 5600 rpm / 2685 xg
Acceleration Time	≤ 25 seconds
Deceleration Time	≤ 30 seconds
Electrical	100 – 240 VAC, 50/60Hz, 3.0 Amps
Dimensions	Height: 7”
	Width: 11”
	Depth: 10”
	Weight: 8¾ lbs.
Environmental	For indoor use only
	Ambient temperature 2ºC to 40ºC
	Maximum 80% RH between 2ºC and 30ºC, decreasing to 50% RH at 40ºC
	Maximum altitude 2000 m
	Main supply voltage fluctuations should not exceed ±10%
	Transient over-voltages according to installation category II
	Pollution degree 2

Specifications are subject to change without notice.

WARNING *– Do not operate or store the Express 3 or its rotor below the 2°C minimum operating temperature. At extreme low temperature (below -18°C) the rotor material is subject to cracking under impact stress (such as dropping onto a hard surface).*

References

1. CLSI. "Protection of Laboratory Workers from Occupationally Acquired Infections; Approved Guideline-Second Edition." CLSI document M29-A2 [ISBN 1-56238-453-8]. CLSI, 940 West Valley Rd, Suite 1400, Wayne, Pennsylvania 19087-1898 USA, 2001.
2. CDC. Recommendations for Prevention of HIV Transmission in Health Care Settings. MMWR (Suppl. No. 2S):2S-18S, 1987.
3. CDC. Updated: US Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV and HIV and Recommendations for Post Exposure Prophylaxis. Appendix A and B. MMWR 50 (RR-11): 1-42, June 29, 2001.

Iris Sample Processing

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55-005187-001 Rev. D

Iris Sample Processing Warranty

Iris Sample Processing, a Division of IRIS International, Inc. warrants that the instruments shall be free from defects in material and/or workmanship, under normal use and service, for the period expiring twenty-four (24) months from the date of installation, provided the purchaser has completed and forwarded to Iris Sample Processing the Warranty Registration Card. Iris Sample Processing will, at its discretion, repair or replace any unit covered under this warranty returned to Iris Sample Processing with shipping costs prepaid. Repaired or replaced instruments supplied under this warranty carry only the remaining portion of the original warranty and repairs shall not interrupt or prolong this warranty. For warranty terms and conditions outside the United States, contact your Authorized Iris Sample Processing Distributor.

No warranty extended by Iris Sample Processing shall apply to any instrument that has been damaged due to misuse, negligence, accident, or damage resulting from unauthorized repairs, alterations, or improper installation.

Iris Sample Processing makes no warranty other than the one set forth herein. This warranty is given expressly in lieu of all other warranties, expressed or implied. The purchaser agrees that there is no warranty of merchantability or of fitness for any intended purpose and that there are no other remedies or warranties, expressed or implied, which extend beyond the description on the face of the agreement. No agent or employee of Iris Sample Processing is authorized to extend any other warranty or assume for Iris Sample Processing any liability except as set forth above. This warranty is only applicable to the original purchaser.

Limitation of Liability

Iris Sample Processing shall not be liable for any loss of use, revenue or anticipated profits, or for any consequential or incidental damages resulting from the sale or use of the products. The purchaser shall be deemed liable for any and all claims, losses, or damages incurred by the use or misuse of the Iris Sample Processing instrument by the purchaser, its employees or others, following receipt of the instrument or other items.

EXPRESS 3 CENTRIFUGE
MODEL M502-22